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10/036,116

12/26/2001

Andrew J. Beaumont-Smith

1662-52700 JMH  
(P01-3816)

3409

22879

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06/08/2005

EXAMINER

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ART UNIT

PAPER NUMBER

2193

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/036,116

Applicant(s)

BEAUMONT-SMITH ET AL.

Examiner

Tan V. Mai

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 January 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,4-16 and 18-32 is/are allowed.
- 6) ☒ Claim(s) 1 and 17 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

PS

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 and 17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The claims recite a method for performing a mathematical function. The claimed invention comprises a plurality of mental steps whereby the claimed mental steps are non-statutory subject matter. Specifically, the claimed method steps can be practiced mentally in conjunction with pen and paper.

However, in order for such a claimed computer-related process to be statutory, the method claims must include either a step that results: (1) in a physical transformation outside the computer, (2) in a limitation to a practical application, or (3) performed specific machine/element(s). Accordingly, claims 1 and 17 are clearly directed to a non-statutory process.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sharangpani et al.

Rejection grounds continue to be those set forth in the previous office action (Paper No. dated 10/12/04, paragraph 5).

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4. Applicant's arguments filed on 01/06/05 have been fully considered but they are not persuasive.

Applicants, in their remarks, argue that:

"Sharangpani is directed to a floating point remainder generator for a math processor. (Sharangpani Title). With regard to selecting quotient values for SRT division, and referring to Sharangpani's Figure 3, Sharangpani states:

**Quotient predictor PLA 230 receives the most significant bits of the divisor** from partial remainder generator circuit 300 over signal lines 322. Carry propagate adder (CPA) 210 receives a truncated portion of the redundant partial remainder from partial remainder generator 300 over signal lines 365 and 369. CPA 210 assembles the sum portion 365 and carry portion 369 of the truncated partial remainder into composite partial remainder 212, which is input to multiplexer 220.

(Sharangpani Col. 4, lines 52-62 (emphasis added)). Thus, Sharangpani teaches using the most significant bits from the partial remainder generator, in part, to select the next quotient value.

Claim 1, by contrast, specifically recites, 'calculating a carry-propagate form of a plurality of most significant bits to the right of the radix point of the unshifted partial remainder....' Sharangpani does not teach or fairly suggest such a system. In particular, Sharangpani does not teach or fairly suggest 'calculating a carry-propagate form of a plurality of most significant bits to the right of the radix point of the partial remainder.' For this reason alone, claim 1 should be allowed.

Claim 1 further recites, 'assigning a next quotient digit to be a whole number value of at least one of the most significant bits to the right of the radix point of the unshifted partial remainder.' The quotient predictor PLA of Sharangpani bases its decision on a combination of the most significant bits of the divisor and a truncated portion of the partial remainder. (Sharangpani Col. 4, line 52 - Col. 5, line 30). Thus, Sharangpani does not assign 'a next quotient digit to be a whole number value of at least one of the most significant bits to the right of the radix point...' For this additional reason, claim 1 should be allowed.

Based on the foregoing, Applicants respectfully submit that claim 1, and claim 3 which depends from claim 1, should be allowed" (emphasis added).

With respect to the argument, the examiner carefully reviews the applied reference and the claimed invention.

First, the statement “[c]arry propagate adder (CPA) 210 receives a truncated portion of the redundant partial remainder from partial remainder generator 300 over signal lines 365 and 369” (col. 4, lines 56-59) is the **same** as the claimed “calculating a carry-propagate form of a plurality of most significant bits to the right of the radix point of the unshifted partial remainder...” feature because the “calculating” step seems to be “receives” the “unshifted partial remainder.”

Second, the statement “PLA 230 generates next quotient 235 which along with next quotient sign 225” (col. 5, lines 3-4) is the **same** as the claimed “assigning a next quotient digit to be a whole number value of at least one of the most significant bits to the right of the radix point of the unshifted partial remainder” because both “PLA 230” and “assigning” feature provide identical “next quotient” features as claimed. Therefore, the rejection is still proper.

5. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (571) 272-3726. The examiner can normally be reached on Mon-Wed and Fri. from 9:30am to 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki, can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is:

Official (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

  
Tan V. Mai  
Primary Examiner